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标题: Magnitude-tunable sub-THz shear phonons in a non-polar GaN multiple-quantum-well p-i-n diode
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来源出版物: APPLIED PHYSICS LETTERS 卷: 100 期: 20 文献号: 201905 DOI: 10.1063/1.4718524 出版年: MAY 14 2012
在 Web of Science 中的被引频次: 0
被引频次合计: 0
引用的参考文献数: 28
摘要: Coherent transverse acoustic phonons are optically generated and detected through the piezoelectric coupling between the build-in electric fields and shear strains of a non-polar GaN multiple quantum wells embedded in a p-n junction. By optical transient transmission change measurement, the phonon frequency is observed to be 0.4 THz which corresponds to a wavelength of 12.5 nm, the periodicity of the multiple quantum wells, and the estimated phonon velocity corresponds to the transverse acoustic phonon velocity in GaN. Moreover, we can magnify the driving amplitude of the generated shear phonons by increasing the reverse bias of the p-i-n diode. (C) 2012 American Institute of Physics. [http://dx.doi.org/10.1063/1.4718524]
入藏号: WOS:000304265000027
语种: English
文献类型: Article
KeyWords Plus: GENERATION
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出版商: AMER INST PHYSICS
出版商地址: CIRCULATION & FULFILLMENT DIV, 2 HUNTINGTON QUADRANGLE, STE 1 N O 1, MELVILLE, NY 11747-4501 USA
Web of Science 分类: Physics, Applied
学科类别: Physics
IDS 号: 945HZ
ISSN: 0003-6951
29 字符的来源出版物名称缩写: APPL PHYS LETT
ISO 来源出版物缩写: Appl. Phys. Lett.
来源出版物页码计数: 4